

WHAT IS CLAIMED IS:

1. A clockwork for pocket watches and wrist watches, comprising a mechanical escapement that cooperates with a mechanical oscillating system comprising as a functional element at least one escape wheel and one anchor, wherein the functional element of the escapement possesses a DLC coating on at least part of its cooperating surface.

2. The clockwork according to claim 1, wherein the at least one escape wheel is provided with the DLC coating at least on its surfaces cooperating with the anchor, the surfaces provided with the DLC coating being an escape wheel gear surface cooperating with the anchors, the anchor pallets or the anchor journals.

3. The clockwork according to claim 1, wherein the anchor is at least partially made of metal at least in its areas cooperating with the escape wheel.

4. The clockwork according to claim 1, wherein the anchor is manufactured as one piece of metal at least in its areas cooperating with the escape wheel.

5. The clockwork according to claim 2, wherein areas cooperating with the escape wheel are anchor pallets or anchor pins.

6. The clockwork according to claim 1, further comprising on a surface of the anchor cooperating with a pivot on a balance wheel, which functions as an impulse pin, are provided with the DLC coating.

7. The clockwork according to claim 6, wherein a staff of the balance wheel serving as an oscillating system is provided with the DLC coating at least in its areas with bearings in a plate.

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8. The clockwork according to claim 7, wherein the bearings for the balance staff comprise bearing bore holes that are provided with the DLC coating at least in the area of the bearing surfaces.

9. The clockwork according to claim 8, wherein the bearing bore holes are located in bearing bushes made from stainless steel or heat treatable steel, and are provided with the DLC coating.

10. The clockwork according to claim 1, wherein at least part of gears of the clockwork are provided with the DLC coating at least in the area of the teeth or tooth flanks.

11. The clockwork according to claim 1, wherein the functional elements of the clockwork are all provided with the DLC coating over their entire surface.

12. The clockwork according to claim 1, further comprising plates and plate elements for bearing the functional elements, and at least one plate or the plate elements are provided with a DLC coating on bearings for the functional elements of the surfaces forming the clockwork.

13. The clockwork according to claim 12, wherein the at least one plate and the plate elements are provided with the DLC coating on their entire surface.

14. The clockwork according to claim 12, wherein the DLC coating extends into bore holes serving as bearings and completely covers inner surfaces of the bore holes.

15. The clockwork according to claim 1, wherein the functional elements are made of brass and have an intermediate layer made of hard metal under the DLC coating.

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16. The clockwork according to claim 1, wherein the functional elements are made of steel and are heat treated by means of vacuum hardening or plasma nitriding before the DLC coating.

17. The clockwork according to claim 1, wherein at least one bearing of the clockwork consists of a jewel and a surface cooperating with this one bearing possesses the DLC coating.

18. The clockwork according to claim 1, further comprising at least two cooperating and sliding surfaces of the clockwork, wherein one surface is made of silicon carbide and the second surface possesses the DLC coating.

19. The clockwork according to claim 1, wherein at least one bearing of the clockwork is made of silicon carbide and at least an opposite surface cooperating with the one bearing, possesses the DLC coating.

20. The clockwork according to claim 1, wherein the functional element cooperating with an anchor or escape wheel of the clockwork are made of silicon carbide, and an opposite surface of the escape wheel possesses the DLC coating.

21. The clockwork according to claim 1, further comprising an impulse pin or pivot of one escapement of the clockwork made of silicon carbide and an opposite surface cooperating with the impulse pin possesses the DLC coating.

22. The clockwork according to claim 1, further comprising a spring barrel with the DLC coating on at least a part of an inner surface.

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23. A clockwork for pocket watches or wrist watches comprising a balance staff with bearings on both ends that can move in a plate or on a plate element, wherein the balance staff has at least one end that can move in a bearing possessing a bearing ring and bearing elements within the bearing ring and enclosing the balance staff, and wherein the bearing elements are made of silicon carbide, a ceramic material, or a synthetic ruby.

24. The clockwork according to claim 23, wherein the bearing elements are spherical.

25. The clockwork according to claim 23, wherein the balance staff can move in the bearing with one journal end having a reduced cross-section.

26. The clockwork according to claim 25, wherein a diameter of the bearing elements is on the order of the diameter of the journal end of the balance staff.

27. The clockwork according to claim 23, wherein the balance staff has a DLC coating, at least in an area that can move in the bearing.

28. The clockwork according to claim 23, wherein the bearing ring and the bearing elements arranged in the ring are covered by a spring on a side of the bearing facing away from the balance staff, against which the balance staff bears with its free end.

29. The clockwork according to claim 28, wherein the spring is hardened and has a DLC coating or a ceramic coating at least on its surface forming a bearing for the balance staff.

30. The clockwork according to claim 23, wherein the bearing ring is axially pre-tensioned by at least one spring element in the direction of the axis of the balance staff, so that the bearing ring with the bearing elements bears with spring tension against a staff end.

31. The clockwork according to claim 30, wherein the bearing ring is held axially by at least two spring elements.

32. The clockwork according to claim 23, wherein the bearing journal has a shape of a truncated cone on a journal end.

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